

**FALL 2018**  
**MATH 369 – 001 Discrete Structures 1**  
**CRN: 21856**

**Instructor:** Dr. Edward Bonan-Hamada W119C  
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**Class meets:** MWF 9-9:50am WS111

**Text:** Discrete mathematics and Its applications, 8<sup>th</sup> ed., Kenneth Rosen, 2019 McGraw-Hill

**Material in Rosen covered:**

Chapter	Sections (Although not in order)	Number of classes
1	1-7 propositional logic, logical connectives, truth tables, Lww	7
2	1-4 sets, Boolean operations	4
3	4-8 Number Theory, the Euclidean Algorithm, prime numbers, unique factorization, congruence algebra	4
4	1-3 induction, strong induction, orderings, well-orderings	3
5	1-5 1 <sup>st</sup> and 2 <sup>nd</sup> counting principles, pigeon-hole principle, permutations and combinations and their generalizations	5
6	1-2 Kolomogorov Axioms, finite discrete probability	2
7	1 definition of recurrence relations	1
8	1-6 set-theoretic definition of relations, equivalence relations, orderings, partial orderings	6
9	1-6 graphs, graph terminology, graph isomorphisms, Euler and Hamilton Paths	6
10	1-2 Definition of trees with some applications	2

**In Addition:** The Satisfaction relation of First-order model theory and an introduction to Turing Machines will be covered.

**Assessment:** In-class participation will be worth 2 points per class meeting. Homework and quizzes will be worth 10 points and there will be at least one of these given a week. In addition, *group work* will be assessed according to the *Group Work Rules* provided below. The grade for the class will be determined by the number of points earned divided by the number of points possible. Grading of homework, quizzes and group work will be based on the following:

- Correctness of the reasoning and completeness of the proofs or solution.
- A lucid and logical presentation of work that meets with the instructor's criteria for communicating mathematical ideas.

Please note the following:

- Late assignments will not be accepted and be given a score of 0.
- Homework, or quizzes, unless stated, must be the student's own work. Remember that plagiarism is a form of cheating.
- Quizzes can be made up only if the student is ill or has a family emergency which is verifiable.

### Group Work Rules

Since much of the work in this class will be done in groups the following rules governing expectations and behavior are as follows:

- Students will treat each other according to CMU's student conduct code.
- Personal, intellectual and academic honesty are expected of all students. Cheating in any form will not be tolerated. This includes not fully participating in group activity but taking credit for the final product.

### Grading of In-class Group Work:

- Each group activity will be worth 2 points. Individuals missing a group assignment will receive a score of 0. Groups that are not prepared and do not finish the assignment within the time limit or whose answer is not close to being correct according to the instructor's criteria get 1 point. Groups that finish the assignment and are at least close to a correct answer receive 2 pts.
- Quizzes on material or problems done in groups will be given to determine if team members have learned the material. These quizzes will be part of the quiz assessment of the class. Group assignments may be extended into homework problems and will be graded as homework.
- Groups will change personnel each time.

**Course Goals:** College level mastery of the material listed in the course description as determined by the instructor. In order to demonstrate college level mastery of the material students must show that:

- They can deal with the information flow of the course (this includes knowing all class and school deadlines and exam schedules).
- They understand the concepts at several levels and their connections.
- They can connect concepts to the writing of mathematical proofs or computations.
- They can communicate their ideas and reasoning methods in clear and concise mathematically correct language and notation.
- They can read the (mathematical) work of others and determine the underlying concepts and validity of that work.
- They are capable of independent and creative thought – the ability to think outside the box.
- They can reflect on their own thought process, be aware of disconnects between their perceptions and the mathematics.
- Develop a learning strategy based on the material in ‘How We Learn’.

**Expectations:**

- Students need to prepare for class ahead of time. In particular, reading the material beforehand and doing assignments is essential.
- ***By registering for this class, students agree to abide by the guidelines set forth in the current CMU catalog concerning academic honesty/integrity, classroom behavior and the treatment of fellow students.***

- Students are expected to take responsibility for their own learning. Although students are not required to attend class they are responsible for any material covered during class. The instructor is not required to provide material or tutoring for missed classes.
- Student-athletes need to inform the instructor of any absences and the need to take exams at alternate times.

### Netiquette

“Netiquette” refers to the etiquette by which you should abide when using online services for your classes and campus communications. This includes email, social media, online chat, blogs, online discussions or message boards, instant messages, etc. Although you are participating in course activities and using course materials online, the [CMU Student Code of Conduct](#) still applies. Online participants are expected to behave in a respectful manner that is supportive to other learners, participants, and faculty.

Online behavior should foster an environment that is productive and thoughtful. Netiquette provides guidelines for facilitating this positive atmosphere. Some basic principles of netiquette include:

- **Be respectful.** Remember that you are communicating with actual people. Be courteous and show respect, even if you have differences of opinion. Remember to treat others as you’d like to be treated. Good manners apply online as well as in the traditional classroom.
- **Think before you post.** Follow posting directions and examples. Be aware of who may be able to view your posting, and how your post may be interpreted. Try to maintain a fair and objective tone.
- **Stay on topic.** Make sure your communication is related to the subject and does not wander off-topic. Ask questions that are appropriate and relevant to the topic. Keep academic discussions free of “chit-chat”.
- **Write clearly.** Even though the online environment may seem more informal than your face-to-face class, you are still in an academic course and mature communication is expected. Correct spelling and grammar are required. Proper sentence

structure and punctuation should be used. Avoid abbreviations and “text speak.”

- **Use appropriate language and style.** Profanity or offensive wording is not acceptable. ALL CAPS and repeated punctuation (???? or !!!!) is considered rude and should be avoided. While it is okay to have robust discussions and differences of opinion, avoid inflammatory wording ‘flaming’ that might start arguments. To disagree, use language that encourages intelligent discourse and discussion. Ignore statements by others that appear inflammatory.
- **Be considerate of others.** Do not make derogatory, condescending, or harassing remarks. Communication should be well-intentioned and well-articulated. It should foster a positive learning environment. Be aware of how sarcasm may be misinterpreted by your readers. Bullying, threatening, or abusive language will not be tolerated.
- **Allow for misunderstandings.** Keep in mind that writing can often convey the incorrect tone or intention. Make allowances for unintended rudeness or misunderstanding.
- **Cite your sources.** If you post work that is not your own or contains work that is not your own, be sure to reference your sources.
- **When in doubt, do not send or post.**

### **Technology & Technology Skill Requirements**

You will need basic computer skills and should be comfortable using a word processing program, browsing for files, and copying and pasting between programs. You will need a computer that connects to the Internet. Your username and password are required for access. If you do not own a computer or if your computer malfunctions during the term, you will be expected to identify a computer to use. Technology issues are not an excuse for missed or late work.

Colorado Mesa University strongly prefers students use the following technology minimums: DSL/Cable modem and high-speed Internet connection, Microsoft Windows XP or later, Microsoft Office 2003 or later, and Java Runtime Environment 7.

(insert any other technology requirements, additional hardware

or software applications students need for your course, such as Real Player, Media Player, MS Word, MS Excel, etc.>

### **Technical Help**

If you experience a technical problem, call the Help Desk at (970) 249-2111 to receive technical support in the following areas:

- Usernames and passwords
- Desire2Learn
- MavZone
- Microsoft Office products
- Connecting to the wireless network
- Desktop computer hardware installation and troubleshooting
- Desktop software installation and troubleshooting
- Network file storage

For more information, visit the CMU Help Desk website at:

<http://coloradomesa.edu/it/helpdesk.html>

### **Withdrawal Statement**

Regular class attendance is expected. CMU is required by law to verify the enrollment of students who participate in Federal Title IV student aid programs and/or who receive educational benefits through other funding sources. CMU is responsible for identifying students who have not attended or logged into a class for which they are registered. At the conclusion of the first week of a semester, instructors will report any registered students who have "Never Attended" a class so that those reported students will be administratively withdrawn from that class. However, it is the student's responsibility to withdraw, using the appropriate CMU form, from any class which she/he is no longer attending or risk receiving a failing grade in that class.

Student's wishing to withdraw must complete and submit the appropriate CMU form by the established withdrawal deadline.

### **General Student Services**

**Educational Access Services:** If you are a student with a documented physical or learning disability and need an accommodation for this class, you must contact the Educational Access Services Office, 248-1801, at the start of the semester.

- The **Tutorial Learning Center (TLC)** is a **FREE** academic service for all Colorado Mesa University students. Tutors are available on a walk-in basis for many courses. Do you have a quick question? Do you

need homework clarification or feedback on a paper? Are you reviewing for a test? Help is available at the TLC!

At the main campus, come to Houston Hall 113 to meet with one of our friendly peer tutors. We are open on Monday through Thursday from 8am-6pm and Fridays from 8am-5pm. We are also open Sundays from 1pm-6pm! Tutoring at branch campuses and distance tutoring is also available. Check out the website for schedules and locations at [www.coloradomesa.edu/tutoring](http://www.coloradomesa.edu/tutoring) or call (970) 248-1392 with any questions.

- **Research Assistance at the Tomlinson Library:**

CMU's professional librarians are an excellent resource for helping you to find the best research to support your academic work, evaluate articles and electronic information, and cite the articles and images that you use in your papers. We are here for you!

Find us: in the Library at the Research Help Desk Mon-Thurs 8am-9pm, Fri 8am-5pm, Sat 10am-5pm, and Sun 1-9pm; via online chat 24/7 at [coloradomesa.edu/library](http://coloradomesa.edu/library); by email at [library@coloradomesa.edu](mailto:library@coloradomesa.edu); or by calling 970.248.1860.

- **Student Services:** The Office of Student Services works to support CMU students in all aspects of college life, by offering a vast array of services, resources and programs that make each student's time at Colorado Mesa University as exciting and successful as possible. Student Services works collaboratively with faculty, students, and staff to create a campus community that fosters the growth of students as strong individuals and productive citizens. To learn more, go to <http://www.coloradomesa.edu/studentservices>.

- **Financial Aid:** Financial aid staff is dedicated to assisting you in sorting through the various forms of student financial aid. We believe that by helping you take advantage of a variety of available resources, you will find an education at Colorado Mesa

University is attainable. Our office is located in the lower level of Lowell Heiny Hall, Room 116. Our phone number is (970)248-1396, or you may contact us via email at [financialaid@coloradomesa.edu](mailto:financialaid@coloradomesa.edu)

- **Advising Center:** Advisors can assist students with course selection and registration, major exploration, and identifying strategies for academic success. The Advising Center is committed to promoting academic success and in facilitating students to attain their educational goals. We are located in Lowell Heiny Hall, on the lower level, room 127. Our phone number is (970)248-1177, or toll free at 1-800-982-6372 (option #7 or extension 1177). Our FAX number is (970)248-1267. You can also reach us via email at [advising@coloradomesa.edu](mailto:advising@coloradomesa.edu) Appointments are scheduled from 9:00 to 4:00, Monday through Friday. Please call a week or two in advance of your desired appointment date to schedule. Bring your picture ID, as failure to do so may result in a rescheduled appointment.
- **Business and Financial Services Office:** The Business and Financial Services Office is located in the lower level of Lowell Heiny Hall. Our staff is available to assist you Monday through Friday from 8:00 am to 5:00 pm, MST. Our phone number is (970)248-1567, our FAX number is (970)248-1136, or you may contact us via email at [businessoffice@coloradomesa.edu](mailto:businessoffice@coloradomesa.edu)